

Draft Framework for CalFed Water Quality Actions for Dissolved Oxygen

Low Dissolved Oxygen Concentrations and Oxygen-Depleting Substances in the Lower San Joaquin River

Objective

Increase dissolved oxygen concentrations in the lower San Joaquin River to levels that meet the Basis Plan Water Quality Objectives

Tasks

- Formation of Steering and Technical Advisory Committees
- Database Development and Data Collection for Sources and Magnitude of Oxygen Depleting Substances
- Data Synthesis
- Evaluate Alternatives and Develop a Management Action Plan
- Develop an Implementation Plan
- Monitoring to Evaluate the Effectiveness of the Implementation Plan
- Update A through F

Task	Action Description	Implementing Entity(es)	Geographic Area ¹	Potential Funding ^{2,3}	Indicators of Success	Completion Date	Total \$\$ Required	Funding Deficit \$\$	Funding Plan ^{2,3}	Date to Secure \$\$	Priority ⁴	Water Quality Program Plan Reference ⁵
A	Formation of Steering and Technical Advisory Committees.					ongoing	\$75,300	\$75,600	City of Stockton is temporarily funding facilitator/ coordinator			
A	1. Formation of Steering Committee. This committee will be composed of all interests in the San Joaquin basin including municipalities, irrigation districts, irrigated agriculture, dairies, environmental groups and state and federal agencies.	Steering Committee		Interim - City of Stockton; long-term funding needed	Regularly held facilitated meetings and minutes. List server and Web site	ongoing	\$25,000 for 3 yrs	\$75,000	City of Stockton is temporarily funding facilitator/ coordinator	ASAP	High	BPTCP

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A	2	Formation of a Technical Advisory Committee. This committee will function to develop study plans, secure funding sources, lead field study investigations, analyze and interpret data and draft management action plans.	Steering Committee		Representing agencies/ organizations	Initial development of proposal for CalFed funding and continuing technical advice to Steering Committee	ongoing	none	NA	NA	NA	NA	BPTCP
B		Database Development and Data Collection for Sources and Magnitude of Oxygen Depleting Substances					1999 - 2001	\$750,000	\$750,000	Proposal submitted to CalFed	ASAP	High	BPTCP CF
B	1	Collect existing data and compile into database.	Technical Advisory Committee		CalFed	Development of a database	1999 - 2000	\$80,000	\$80,000	Proposal submitted to CalFed	ASAP	High	BPTCP CF WQPP
B	2	Determine surface sources of oxygen demand through continuous and discrete monitoring.	Technical Advisory Committee		CalFed	Report identifying local and upstream surface water sources of oxygen demand	1999 - 2001	\$250,000	\$250,000	Proposal submitted to CalFed	ASAP	High	BPTCP CF WQPP
B	3	Determine areal extent and magnitude of sediment oxygen demand (SOD).	Technical Advisory Committee	SIR (Mossdale to ship channel)	CalFed	Report describing areal extent and magnitude of SOD	1999 - 2001	\$300,000	\$300,000	Proposal submitted to CalFed	ASAP	High	BPTCP CF WQPP
B	4	Determine influence of daily and tidal variability on oxygen concentration	Technical Advisory Committee	SIR (Mossdale to ship channel)	CalFed	Report of results of diel and tidal effects on dissolved oxygen	1999 - 2001	\$120,000	\$120,000	Proposal submitted to CalFed	ASAP	High	BPTCP CF WQPP
C		Data Synthesis					1999 - 2001	\$1,000,000	\$1,000,000	Proposal submitted to CalFed. need additional funding - see C4	ASAP	High	BPTCP CF WQPP

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C	1	Determine relative contributions of sources to oxygen depletion. This will include evaluating contributions of upstream nutrient sources contributing to algal production and local and upstream point and non-point sources of oxygen depleting substances. Physical parameters, which affect dissolved oxygen, will also be evaluated.	Technical Advisory Committee		CalFed	Report summarizing source contributions and physical factors which affect dissolved oxygen concentrations	2000 - 2001	\$500,000	\$500,000	Proposa. submitted to CalFed		BPTCP CP WQPP
C	2a	Validation of current Carl Chen dissolved oxygen model by US EPA headquarters.	US EPA HQs		US EPA	Model validation report.	1999	\$30,000	0			BPTCP CP WQPP
C	2b	Refine, calibrate and verify Carl Chen dissolved oxygen model with current and historical data.	Steering and Technical Committee		CalFed, City of Stockton	A model that accurately predicts dissolved oxygen concentrations using historical and current data.	1999 - 2000	\$100,000	\$100,000	City of Stockton may assist with funding this task.		
C	3	Analysis of field data using model to prioritize focused studies to determine primary sources and mechanisms contributing to oxygen depletion.	Technical Advisory Committee		CalFed, City of Stockton	Report summarizing and prioritizing study designs that further identifies sources of oxygen demand substances.	2000 - 2001	\$200,000	\$200,000	Proposal submitted to CalFed		BPTCP CP WQPP
C	4	Focused studies determined from Task C3 on primary oxygen depleting factors that appear to be controllable.	Steering and Technical Advisory Committee	SJR & tribes; specific areas currently unknown	Funding needed	Reports summarizing specific contributions of responsible parties to oxygen suppression.	2000 - 2001	\$200,000	\$200,000	Needs funding		
D		Evaluate Alternatives and Develop Management Action Plan.						\$350,000	\$350,000	Proposal submitted to CalFed		

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D	1	Evaluate alternatives. Using information collected from C3/C4, conduct remediation and feasibility studies to evaluate costs, benefits and likelihood of success.	Steering and Technical Committees		CalFed	Series of reports summarizing management alternatives for responsible parties	2000 - 2001	\$250,000	\$250,000	Proposal submitted to CalFed	2000	High	BPTCP CP WQPP
D	2a	Develop a Management Action Plan (Plan) using management alternatives from Task D1. The Plan will also include funding recommendations to implement the preferred alternatives.	Steering and Technical Committees		CalFed	The Plan will outline and prioritize alternate strategies including pollution limits that are expected to lead to compliance with the Basin Plan Water Quality Objectives for dissolved oxygen	2000 - 2001	\$100,000	\$100,000	Proposal submitted to CalFed			BPTCP CP WQPP
D	2b	A Management Plan will be developed by the CVRWQCB should the Steering and Technical Committees be unable to do so.	CVRWQCB		Needs funding if Task D1 is lacking or incomplete	Same as Task D2a	2000 - 2001	\$150,000	\$150,000 (if required)	A funding source will have to be secured by the CVRWQCB should the Steering Committee be unable to complete this task.	2000		
E	1	Implementation Plan (IP). Recommendations from Task D2 will be submitted to CVRWQCB staff.	CVRWQCB		Funding from US EPA	The IP will outline load and waste load allocations and control options for meeting the Basin Plan Water Quality Objectives for dissolved oxygen. The IP will also include a compliance schedule.	2002	\$150,000	0	TMDL report funding from U.S. EPA	2002		BPTCP WQPP
E	2	CVRWQCB staff will develop a Basin Plan amendment based on E1.	CVRWQCB		Funding needed	Basin Plan amendment	2003	\$200,000	\$200,000	To date, there is no funding for this task.	2002		BPTCP

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F	Monitoring to Evaluate the Effectiveness of the Implementation Plan.	Steering Committee and to be determined		Funding needed	Compliance monitoring to meet targets and time-schedule outlined in the IP.	2002 and ongoing thereafter	\$50,000/yr.	\$50,000/yr.	No funding available; monitoring is needed to assess TMDL compliance	2003		BFTCP WQPP
C	Update A through F. If monitoring indicates that the targets and time-schedule outlined in the IP are not being met then corrective action will be taken.	CVRWQCB and Steering Committee		Funding needed	Compliance with the Basin Plan Water Quality Objectives for dissolved oxygen	unknown	unknown	unknown	unknown			

¹ San Joaquin River within San Joaquin, Stanislaus and Merced Counties except where noted

² The Steering Committee has contacted the State legislature for possible funding.

³ Proposal submitted to CalFed on 16 April 1999 for one year (Phase I) of funding; the proposal included a budget for 2 additional years (Phases II and III).

⁴ High priority is defined as the funding needed within the next 3 years.

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 BFTCP: Bay Protection and Toxic Cleanup Program, Central Valley Regional Water Quality Control Board, December 1998.
 CP: Proposal to CalFed entitled "Determination of the Causes of Dissolved Oxygen Depletion in the San Joaquin River".
 WQPP: Water Quality Program Plan, CalFed Bay Delta Program, January 1999.